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Please read this manual thoroughly and follow the **Installation** procedures to prevent any damage to the Unit or any connecting device

- * Features and functions may be added or changed after the manual was written.
- * To prevent damages to your installation, it is important that all devices are properly grounded.



----- *Introduction*

Overview

Previously, a technician / engineer had to carry a heavy LCD monitor, keyboard and mouse on a crash cart to diagnose and fix problem servers. Now, simply carry around any laptop and the ServerLink **SL-PCC-01**.

The connection is simple Plug & Play. One end of SL-PCC-01 connects to the laptop using the provided USB A-B cable and the other end connects to any computer / server by using the VGA + USB (or PS/2) cable.

Most conveniently, there are NO drivers to install on the computer / server side. Once you have connected the computer / server to the SL-PCC-01 and the driver installation on the laptop is complete, the full server screen will come up as a window on your laptop and offer you full control of the keyboard and mouse exactly like you plugged directly to the server. You can also take a snapshot of any screen of the servers and save it to your laptop for your further analysis and trouble shooting.

The SL-PCC-01 also supports wireless keyboard and mouse, allowing you to diagnose and fix your servers in a cable-free environment.

Features

- No drivers or software required for Server / PC you are connecting to
- Take full control of a server on your laptop screen without rebooting the server or changing it in any way
- Emulated keyboard and mouse allows you to interact with the server as a window on your laptop
- Supports USB or PS/2 Server (KVM Switch)
- USB dongle compartment allows you to plug the USB dongle of a wireless keyboard / mouse underneath the unit to enjoy full wireless control
- Graphical User Interface (GUI) for easy and friendly operation
- Real-time video scaling allows you to always see the entire screen even on a small laptop display
- Compatible with most popular screen resolutions, including XGA, SXGA, UXGA, WSXGA, Full HD and WUXGA system
- Host-powered – no need to carry around a bulky power supply
- The Console Side (laptop side) driver is compatible with Windows and Mac platforms

Packing Checklist

| | |
|----------------------------------|-----|
| SL-PCC-01 Unit | x 1 |
| USB A-B Cable | x 1 |
| USB KVM Connector | x 1 |
| PS/2 KVM Connector | x 1 |
| CD with the driver & User Manual | x 1 |
| Foot Pad Set | x 1 |



USB KVM Connector



PS/2 KVM Connector

Product description

1. Before installation, ensure to power off all devices that will be connected to this system (excluding Server).
2. Place cables away from fluorescent lights, air conditioners and machines that are likely to generate electrical noise.
3. Users MUST install the software first before the physical installation. The driver installation is a one time installation on the laptop side. It is not necessary to install any driver on the KVM / Server side. Simply plug & play on the KVM/Server side without any rebooting.



Plug USB wireless receiver here

Laptop Driver Installation: Easy Console Box

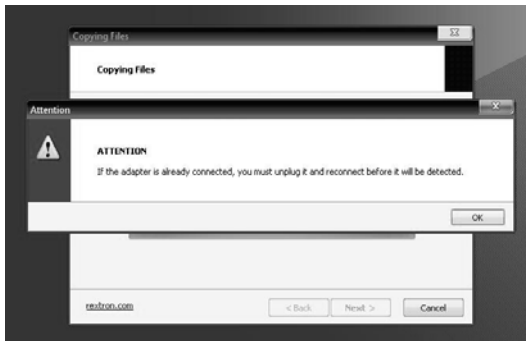
To avoid interference during the installation processing, please disconnect the SL-PCC-01 and close any dialog windows for “Add new hardware” from the laptop prior to the driver installation.

1. Insert the provided CD, and then click the “setup.exe” for running installation program.
2. Proceed through the installation prompts, until the installation is complete.
3. Once the installation is complete, the driver will have been installed on the operating system.
4. The SL-PCC-01 and your laptop are ready to be used now, and there is no need to reboot. (In some specific situations and Windows’ limitations, you might be directed by setup software to reboot.)

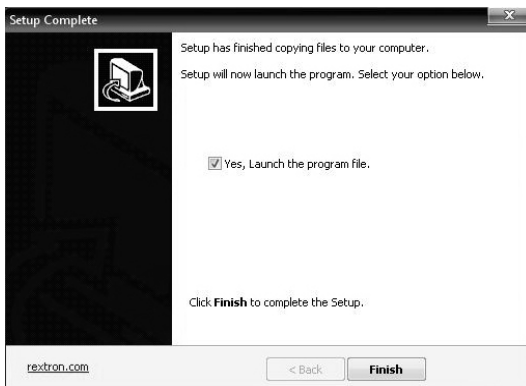


Double click the setup.exe to begin the installation

NOTE: The driver installation procedure and software operations may differ from version to version, that may cause the snapshot on this user’s manual slightly differ from others without affecting the function.



Ignore the ATTENTION shown on the screen



Check "Yes, Launch the program file"



A Pop-Up Screen (see above) indicating the driver installation has been accomplished. And users can now start the physical installation.

Hardware Installation

Once the driver is installed on the laptop, plug the KVM connector (VGA+USB or VGA+PS/2) on the SL-PCC-01 into the Server (or KVM Switch).

1. Connect the video port on the Server and the SL-PCC-01 by using a built-in HDB-15 VGA cable. If you are utilizing a DVI-I (analog) Server in this application, please use a DVI to VGA adapter for the connection.
2. Connect the keyboard/mouse port on the USB enabled Server and EZ101 via the USB KVM Connector. For PS/2 Server, simply apply the PS/2 KVM Connector to instead to connect the PS/2 keyboard/mouse port on the Server (or KVM Switch).
3. Connect the SL-PCC-01 to a USB port on the laptop using the provided USB A-B cable. The LED "Laptop OK" will flash BLUE indicating the well connection between the laptop and SL-PCC-01, and the LED "keyboard/Mouse emulation" will light up steady RED indicating the SL-PCC-01 is powered ON.



On the laptop screen users will see figures below:



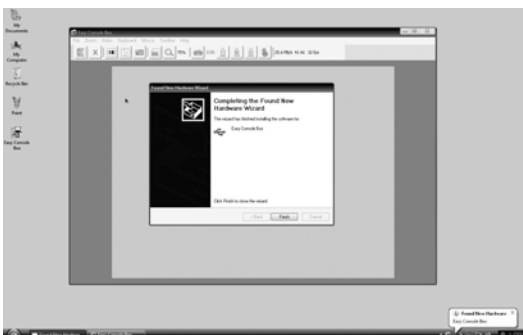
Neglect the Welcome screen and press "Cancel" button



Neglect the Welcome screen and press “Next” button



Press “Next” button again

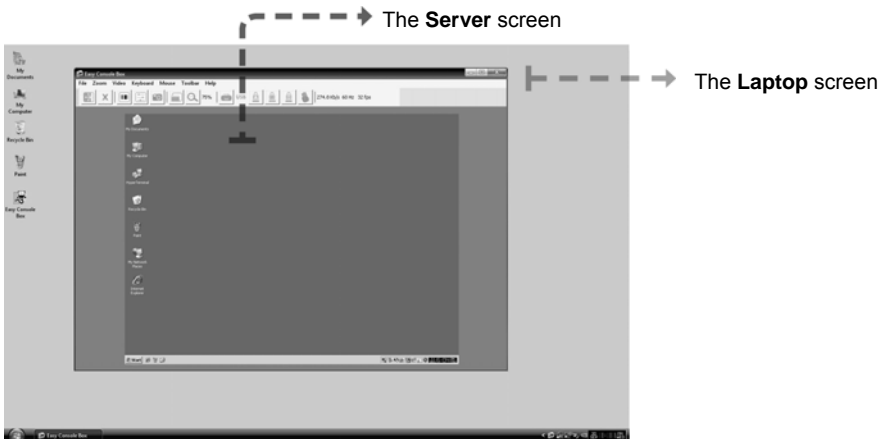


Both software and hardware installation are accomplished.

A confirmation tip shown on the lower right corner

Operation

On the laptop screen users can see two window programs performing at the same time and resembling PiP feature. One window (laptop screen) is displayed on the full screen and the other (server screen) is displayed in inset window.



LED Indicators

There are three LEDs located on the top side of the unit.



1. Server (KVM Switch) Keyboard / Mouse LED:

The LED lights RED indicating that the emulated USB keyboard / mouse are well connected. It will blink frequently whenever the emulated mouse moves, or emulated key is pressed.

2. Server (KVM Switch) Video LED:

The LED lights ORANGE indicating that the valid VGA video signal is received.

The constant flashing indicates the bad connection between the Server (KVM Switch) and SL-PCC-01 (and/or in some power saving modes). The LED goes off when the video cable is disconnected. Regardless of the video input status, this LED will turn on.

3. Laptop OK LED:

The LED flashes constant BLUE indicating the well connection between the laptop and SL-PCC-01. The LED pulses slowly indicating the disconnection between the laptop and SL-PCC-01 or the laptop driver is not executed. Otherwise, the LED off indicates that both the USB and KVM Cable to the SL-PCC-01 are not well connected.

Toolbar

There is a toolbar along the top edge of the window. This toolbar may be hidden, detached or dragged onto the other edges of the window. It provides a number of shortcuts and some status information. All functions are duplicated in the pull down menu system.

The right side of the toolbar status area reports some statistics while the system is running. The first number is the USB bandwidth, in bits per second. This can range from zero to 200Mbps depending on your laptop and the video picture being observed. When no motion is detected by our hardware video compression, no bits are sent. Noisy video cards and ongoing video animations will cause the constant stream of USB traffic.

The next two numbers, 56Hz and 30fps in this example (see figure below), report the achieved frame rates for the hardware and software components respectively. The hardware number (Hz) will range from 1 to 85Hz, but is typically 30Hz or 60Hz.

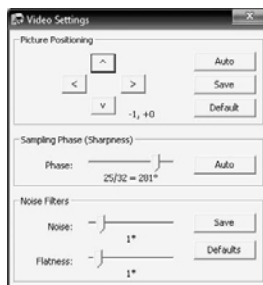
The software number is limited to 60 fps (frames per second) maximum and varies depending what other software on your laptop is doing.

1 2 3 4 5 6 7

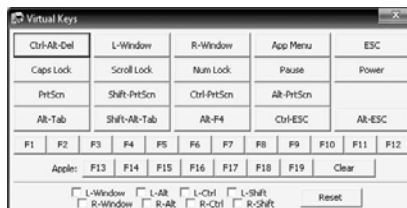
8 9 10 11 12 13



1. Rotate the toolbar either vertical or horizontal
2. Close the Easy Console Box application immediately.
3. Fine-tune video picture.
4. Open Video Settings window



5. Save a snapshot of the screen as PNG file
6. Toggle full-screen display
7. Go to 100% zoom, or largest possible (in this sample 81% is current zoom factor as a percentage)
8. Open "Virtual keys" window to send special key strokes





For example, press "L-Window" button to begin the windows properties.

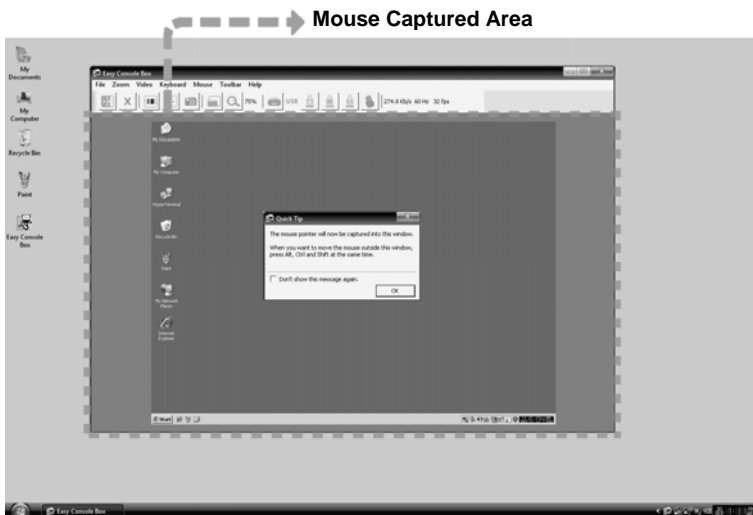
9. USB (or PS/2) Keyboard mode
10. Caps lock button. Click to simulate pressing caps lock
11. Num lock button
12. Scroll lock button
13. Send three-finger salute (Ctrl-Alt-Del)



Mouse captured

The mouse capture function enables the laptop users to exclusively control the connected Server (or KVM Switch) via SL-PCC-01. Double click your laptop mouse cursor in the “Mouse Captured Area”, a message box “Quick Tip” pops up indicating that your mouse pointer will be captured into the window (server screen). Press “OK” and now you can enjoy the fully control of the Server (or KVM Switch).

During the “Mouse captured” status the toolbar will become slightly invisible that means users cannot apply any functions on the toolbar.



NOTE: To escape from the Mouse Captured Area, please press **Alt + Ctrl + Shift** at the same time.

Laptop Driver Installation: Easy Console Box

To avoid interference during the installation processing, please disconnect the SL-PCC-01 prior to the driver installation.

1. Insert the provided CD, and then double-click the “MacOSX-install.dmg” for running installation program.
2. After a short delay to verify the disk image, a finder window will open showing the application. Drag the “Easy Console Box” onto the Applications link.



3. If you would like to add this application to the Dock, you can drag and drop it from Applications onto the Dock.



4. The software is now installed and ready to run. Users can find it in Applications.

NOTE: The driver installation procedure and software operations may differ from version to version, that may cause the snapshot on this user's manual slightly differ from others without affecting the function.

Hardware Installation

Once the driver is installed on the laptop, plug the KVM connector (VGA+USB or VGA+PS/2) on the SL-PCC-01 into the Server (or KVM Switch).

1. Connect the video port on the Server and SL-PCC-01 by using a built-in HDB-15 VGA cable. If you are utilizing a DVI-I (analog) Server in this application, please use a DVI to VGA adapter for the connection.
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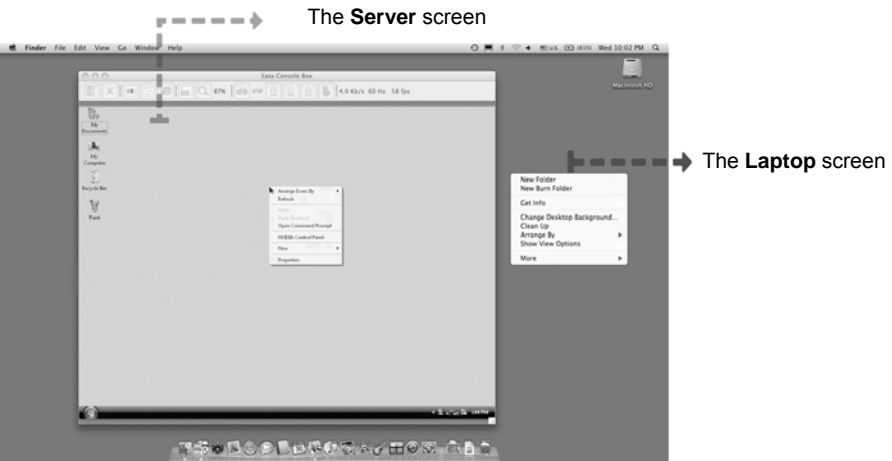


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The constant flashing indicates the bad connection between the Server (KVM Switch) and SL-PCC-01 (and/or in some power saving modes), or an unsupported video mode / other video signal trouble is detected. The LED goes off when the video cable is disconnected. Regardless of the video input status, this LED will turn on.

3. Laptop OK LED:

The LED flashes constant BLUE indicating the well connection between the laptop and SL-PCC-01. The LED pulses slowly indicating the disconnection between the laptop and SL-PCC-01 or the laptop driver is not executed. Otherwise, the LED off indicates that both the USB and KVM Cable to the SL-PCC-01 are not well connected.

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There is a toolbar along the top edge of the window. This toolbar may be hidden, detached or dragged onto the other edges of the window. It provides a number of shortcuts and some status information. All functions are duplicated in the pull down menu system.

The right side of the toolbar status area reports some statistics while the system is running. The first number is the USB bandwidth, in bits per second. This can range from zero to 200Mbps depending on your laptop and the video picture being observed. When no motion is detected by our hardware video compression, no bits are sent. Noisy video cards and ongoing video animations will cause the constant stream of USB traffic.

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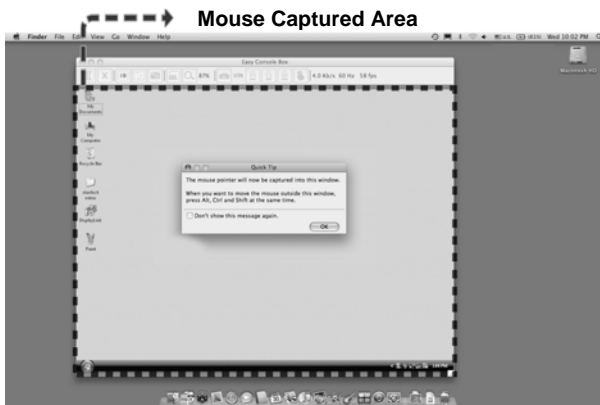
- 1. Rotate the toolbar either vertical or horizontal
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- 4. Open Video Settings window
- 5. Save a snapshot of the screen as PNG file
- 6. Toggle full-screen display
- 7. Go to 100% zoom, or largest possible (in this sample 81% is current zoom factor as a percentage)

8. Open “Virtual keys” window to send special key strokes
9. USB (or PS/2) Keyboard mode
10. Caps lock button. Click to simulate pressing caps lock
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The mouse capture function enables the laptop users to exclusively control the connected Server (or KVM Switch) via SL-PCC-01. Double click your laptop mouse cursor in the “Mouse Captured Area”, a message box “Quick Tip” pops up indicating that your mouse pointer will be captured into the window (server screen). Press “OK” and now you can enjoy the fully control of the Server (or KVM Switch).

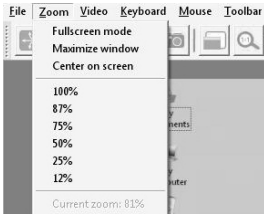
During the “Mouse captured” status the toolbar will become slightly invisible that means user cannot apply any functions on the toolbar.



NOTE: To escape from the Mouse Captured Area, please press **shift + control + option** at the same time.

----- *Pull Down Menu System*

Zoom



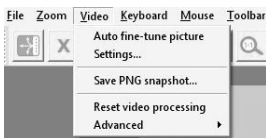
By design, this program will never show scroll bars. The entire video picture is always completely visible. It is generally scaled down to fit into the available space inside the window. You can enlarge the video image by resizing the main window. Similarly, if you maximize the

main window, the size of the video image will be maximized. In the Zoom menu, we provide a number of buttons which set the zoom factor and resize your window to achieve that zooming factor.

For example, if the attached computer is running at XGA resolution (1024 x 768), and you select 50% zoom, the main window will be set to a size of approximately 512 x 384. Please keep in mind that not all zoom factors will be possible; your laptop screen may be too small for the larger percentages. If so, the software will make it as big as it can. Since many laptops have smaller screens, you may wish to run this program maximized. That leaves other software on your laptop easily accessible. The system also supports full-screen mode, by clicking on the full-screen/window icon on the toolbar or select it from the Zoom menu, where the window decorations are removed and other applications are hidden. To get out of full screen mode, click the icon again. If the toolbar is disabled when you enter full-screen mode, a smaller toolbar is provided with only the Full screen and Quit options. This toolbar floats and may be moved out of your way, but cannot be removed. Also the Zoom menu provides an option to center the window on the screen. This can be handy when it is off the edge of the screen for some reason. There is also a shortcut for maximize (toggle). This does the same thing a clicking the maximize button in the title bar of the main window.

- If your laptop is wide-screen (16:10 aspect, or 1280x800, etc), it may be helpful to locate the toolbar along the left vertical edge. This gives more usable screen height, and if the server's screen is square (4:3 aspect) the space used by the vertical toolbar would have been wasted anyway.
- This program does not enlarge video, only shrink it. Therefore, text mode (720x480 or similar) will not be enlarged to fill your screen.
- The toolbar is automatically disabled when you select a Zoom factor below 50%. You need to enable it manually when you return to a larger size.
- Unusable parts of the window are shown in grey. This happens because the video is scaled by an integer factor of 1/16 and due to other rounding issues.

Video

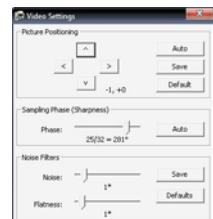


There are three functions available under the Video menu: Auto fine-tune picture, Video related settings and Save PNG snapshot.

1. Auto fine-tune picture: Use this function to automatically adjust the sampling phase of the video. This makes the picture sharper and reduces USB traffic. This is generally not required since we perform this operation automatically whenever video is applied. The picture will freeze for about one second while the calibration is performed.

2. Settings:

Picture Positioning These four arrows may be used to fine-tune the position of the video image. The adjusted values will be used automatically whenever this same video mode is seen again.

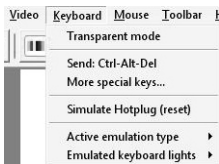


Sampling Phase (Sharpness) This slider allows you to override the automatic phase adjustment. Press Auto to perform auto phase again. The numbers shown under the slider are the phase (angle) of the control.

Noise Filters Our hardware implements two filters to reduce USB traffic and improve picture quality. By default they are both enabled and set to one. You may override that here and save your setting (which will apply to all video modes). The first 'Noise' filter helps to remove speckle noise. There is usually no visual effect to this filter, except that at high values, moving the mouse may leave some pixels behind (mouse droppings). The second 'Flatness' filter converts regions that are nearly all the same color into exactly the same color to aid compression. The picture will become chunky or blocky at high values.

2. Save PNG snapshot: Use this function to record a copy of the window contents and save it into a PNG or BMP file. The snapshot happens as soon as the menu item (or toolbar camera) is clicked. You are then given a chance to choose where the image file should be stored. A default filename is provided based on the current time.

Keyboard



This menu deals with the emulated keyboard. Most keystrokes are forwarded directly to the host under control. However, some special key combinations, such as Ctrl-Alt-Del, are blocked by the laptop's operating system.

Therefore, we have provided a dialog with lots of buttons that can be used to send these sequences manually.

More special keys All of the buttons in the top part of this window simply send the

keystroke listed. Many of them are useful

combinations, such as Alt-F4, which closes the

current window under Windows. Lower down,

there are check-box (toggle buttons) for each of

the meta keys (both left and right). When you check these boxes, the key-down

event is sent. When the check-box is unclicked, the key-up event is sent. This

means you can use them to compose complex sequences not shown on this screen.

Use the Reset button to un-check all boxes. Clicking any of the keys above the line

also resets the check-box. Please note that the L-Windows button at the top will

send both a down and up, whereas the check-box labeled L-Windows, will do the

down when checked and the up only when cleared.



Simulate Hotplug (reset) Clicking on this menu item will 'hotplug' the USB going to

the host keyboard and mouse. Hot plugging simulates unplugging the USB cable

and immediately reconnecting it. It will reset the USB keyboard and mouse

emulation completely. This can be used if the host operating system is confused.

If PS/2 mode, this also simulates a hotplug event with similar effects. Most modern

operating systems can handle a PS/2 hotplug event, although this interface was

never designed for hotplug. When hot-plugging, the keyboard and mouse are not

available until the host O/S device driver reinitializes the emulated keyboard and

mouse. During this period, a red X is shown over the keyboard icon on the toolbar.

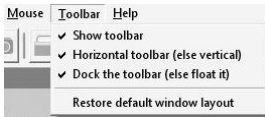
Mouse



Mouse related toggles present on the Mouse menu. They affect the emulated USB mouse in USB mode.

Disable mouse entirely Although we expect most customers to use the laptop's pointing device (touch pad), if you have a standard USB mouse with you, you might want connect it directly to the server instead to the laptop. The laptop's screen and keyboard are still used in this configuration, but the mouse emulation is not needed. We also recommend this configuration when using the USB Laptop Console with USB KVM switches. These USB KVM products generally cannot understand our USB mouse device because of its advanced use of the HID standard (Human Interface Device). You can turn on this toggle to disable our mouse emulation completely. This is helpful because touches to the laptop's mouse pad will not interfere with your full-sized USB mouse. The emulation is completely removed, down to the USB descriptor level, so any possible confusion is removed and we appear to be an utterly standard USB keyboard. In this mode, the mouse cursor is shown as a circle with a line. This is to remind you that clicks won't be effective in that window. Changes to this setting will cause a USB hot plug event, and this setting is remembered in the USB Laptop Console itself.

Toolbar



This menu provides a more direct way to control the toolbar. You can easily 'dock' or 'float' the toolbar, as well as hide or show it. The current status of the toolbar is shown as check marks beside these choices. The detailed state of the toolbar (floating, docked, vertical, horizontal position if floating and so on) is preserved when this program is closed and reopened. However, if you wish to return to the default layout, use the Restore default window layout.

Specifications

| | | SL-PCC-01 |
|---------------------------|---------------------|---|
| Computer (Server) Side | Video | HDB15 (male) |
| | Keyboard (emulated) | USB or PS/2 |
| | Mouse (emulated) | USB or PS/2 |
| Console (Laptop) Side | Video | Laptop Screen |
| | Keyboard & Mouse | Laptop Keyboard |
| | | Laptop Touch Pad |
| | | USB Keyboard / Mouse or Wireless Keyboard / Mouse |
| Video Transmission | | USB 2.0 (480Mbps) |
| Max. Resolution | | WUXGA (1920 x 1200) Full HD (1920 x 1080) |
| LEDs | | Video Signal OK |
| | | Keyboard / Mouse Status |
| | | USB (Laptop) Status |
| Power | | Self Powered |
| Dimensions (H x W x D) | | 24 x 80 x 115 mm |
| Weight | | 320g |

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY FOR DIRECT OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFIT, LOSS OF BUSINESS, OR FINANCIAL LOSS WHICH MAY BE CAUSED BY THE USE OF THE PRODUCT EXCEEDS THE PRICE PAID FOR THE PRODUCT.

The direct vendor makes no warranty or representation, expressed or implied with respect to the contents or use of this documentation, and especially disclaims its quality, performance, merchantability, or fitness for any particular purpose.

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